

stylous unless the migration rate were extremely high, which would be the case only if the habitats were adjacent. The model is consistent with the known distribution of population types.

This means that over short periods of a few generations, population size determines the selective value of homostyly. After populations have reached carrying capacity, habitat size, by setting the upper limit to population size, determines the selective value of homostyly.

Finally, selection for autogamy in founding populations seems to be a sufficient explanation for the distribution pattern of populations in this species. It is unnecessary to postulate that autogamy is advantageous because it preserves certain closely-adapted genotypes—the “fitness” hypothesis first advocated by Mather (1943). This concurs with recent studies of the evolution of autogamy in other annual genera (Lloyd, 1965; Arroyo, 1973). These studies also support the view that autogamy is selected primarily under conditions of unreliable or inefficient pollinator availability.

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NOTES AND NEWS

RANUNCULUS FLAGELLIFORMIS DISCOVERED IN THE GALÁPAGOS ISLANDS.—No member of the Ranunculaceae had been reported from the Galápagos Islands by the end of 1970. Then, in June 1971, Paul A. Colvinaux and Charles Racine from Ohio State University discovered plants of a semi-aquatic *Ranunculus* near the summit of Mount Crocker on Isla Santa Cruz. Upon return to Ohio, Colvinaux sent me a sheet of the material and a slide bearing a preparation of its pollen.

An appeal was made to Daniel Weber, who was searching for orchids in the Galápagos Islands at the time, requesting that he look for good specimens of the *Ranunculus* around the higher flanks of Mount Crocker. He replied that he had already collected buttercups in that area during the previous February and forwarded a duplicate sheet of his specimens.

Weber's plants bore several flowers and heads of mature fruits. One flower was soaked and carefully dissected, and mature achenes were examined. A note on Weber's specimen read "Petals 3" and a check of the flowers available and of a well pressed one on Colinvaux and Racine's specimen indicated 4 or 5 sepals and 2 or 3 petals. Study of the two collections and comparison of them with material from Mexico and Central and South America showed the plant to be *Ranunculus flagelliformis* Smith.

Many descriptions of this species are brief or inadequate for making a determination of an unfamiliar plant (see Martius, *Flora Brasiliensis* 13:156-157, *pl.* 33, *fig.* II, 1864) so the following description and drawings (*fig.* 1) are presented.

RANUNCULUS FLAGELLIFORMIS Smith in Rees, *Cycl.* 29: no. 13. 1819. Plants perennial in shallow water or on muddy margins of pools; primary leaves 10-15 in tufts above slender, white, sparingly branched roots to 10 cm long; petioles erect, 5-20 cm long, 1.5-4.0 mm in diameter, glabrous below, appressed-strigose with upwardly pointing, golden hairs on terminal 2-4 cm of larger leaves; blades deltoid-ovate to suborbicular, 2.0-5.5 cm broad, 2.0-4.5 cm long, basally truncate to shallowly cordate, appressed-strigose on upper surface near petiole, otherwise glabrous, subentire to coarsely but shallowly crenate, 5-9-veined; 1 to several slender stolons spreading 30-50 cm from primary tuft of leaves, at least some of lower nodes rooting and with 1 or 2 small leaves and a single flower at each node; internodes 5-12 cm long; pedicels erect or ascending, 1.5-3.5 cm long, sigmoid, appressed-strigose with golden hairs 0.2-0.5 mm long; sepals 4(5), broadly ovoid, rounded at both ends, shallowly to markedly cucullate, 2.0-2.2 mm wide, 2.8-3.2 mm long, almost membranous, pale yellow-green, glabrous; petals 2(3), about 1.0-1.3 mm wide, 2.8-3.0 mm long, pale yellow with tinge of green toward base, obovate, the claw about 0.4 mm wide, 0.5-0.6 mm long; gland small, covered by a minute transverse scale; stamens few (6-12 in flowers examined), in groups of 2 or 3, filaments 1.0-1.3 mm long, half as thick as broad, strongly incurved; anthers golden yellow, 0.8-1.0 mm long; pollen grains ca 32-38 μ m long, 21-30 μ m wide, dark brown, irregularly reticulate-ridged; fruiting heads 4-6 mm long, 3-5 mm wide, bearing 8-15(20) achenes; mature achenes asymmetrically ovate, slightly flattened laterally, 1.6-2.0 mm long, 0.8-1.0 mm front to back, 0.3-0.5 mm thick, nearly smooth, but with several low, rounded, minute umbos on each side, a blunt apiculation 0.1-0.2 mm long at apex, a narrow ridge along outer, curved margin and a narrower one along the adaxial, nearly straight margin.

Specimens examined: Behind Cerro Bandera, Pampa Zone, in a pond, 580 m. (localized) Isla Santa Cruz, *Weber 1114*, Feb 1971 (DS); aquatic, in small pools on saddle between Mt. Crocker and "chimney", Isla Santa Cruz, *Racine and Colinvaux 60*, 26 Jun 1971 (DS).

There were minor differences in size and density of pubescence on petioles and blades when the early and late season specimens were compared, but these seemed no more than those shown by many species collected several months apart.

Alan B. Franklin reported in June, 1973, that no buttercups could be found in that year. Weber's characterization of "localized" probably indicates the distribution pattern, but it is also probable that this plant grows only during years of high precipitation. While collecting in anticipation of preparing *The flora of the Galápagos Islands* (Wiggins and Porter, 1971), I explored the region around Mount Crocker in January-February, 1964, and again in 1967, but found no *Ranunculus*.

Colinvaux (personal communication) reported that studies of sediment cores taken from bottoms of pools on Isla Santa Cruz indicated that pollen from this *Ranunculus* had been deposited over a considerable period.

I thank Colinvaux for telling me of his discovery and for the specimens he gave me. Also, I thank Weber for his generous gift of a beautifully prepared sheet and Alan B. Franklin for searching the higher parts of Isla Santa Cruz in 1973.—IRA L. WIGGINS, Department of Biological Sciences, Stanford University, Stanford, California 94305.

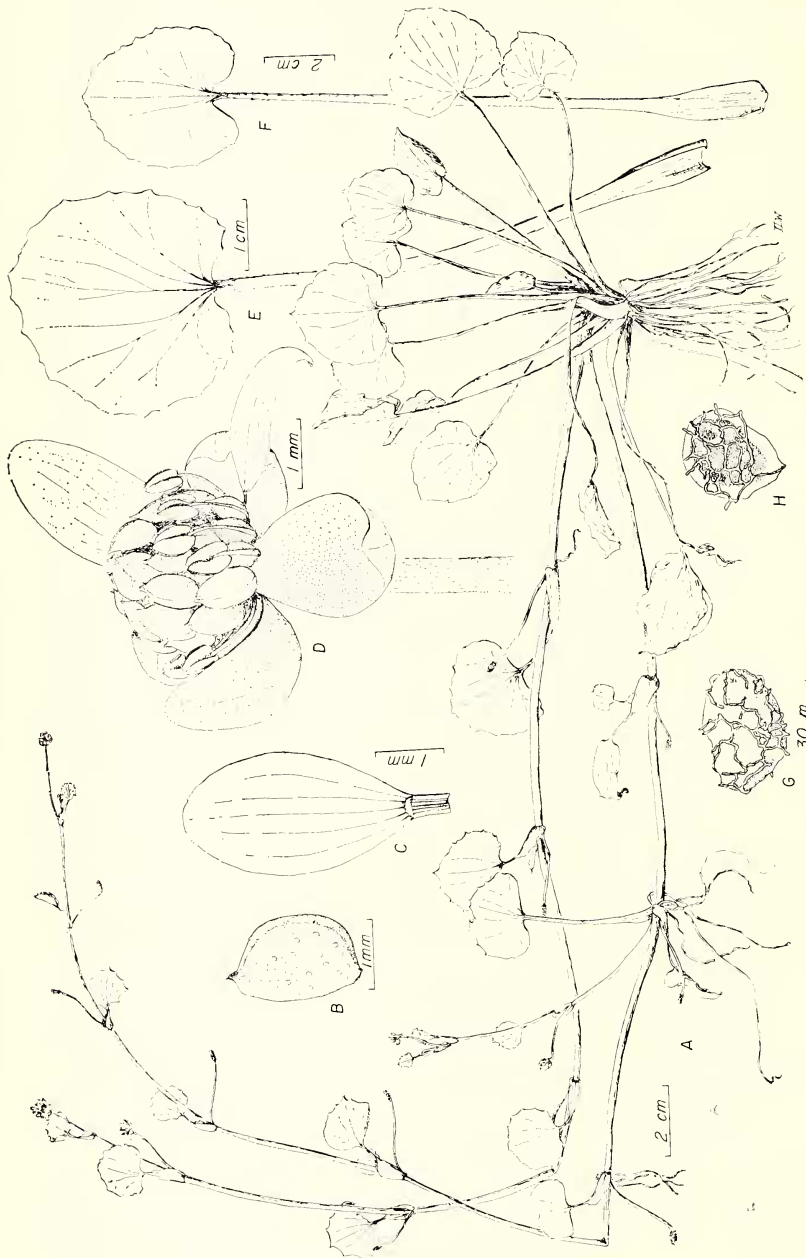


FIG. 1. *Ranunculus flagelliformis* Smith: A, Habit; B, Mature achene; C, Petal; D, Flower after dehiscence of anthers; E, Leaf (A-E from Weber 1114). F, Leaf; G and H, Pollen grains, from above and from side (F-H from *Racine and Coltravaux* 60).